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β-decay of ^{134}Sb as Calibration for β-Delayed Neutron Measurements Performed with Trapped Ions[1] K. SIEGL, A. APRAHAMIAN, Univ of Notre Dame, N.D. SCIELZO, LLNL, G. SAVARD, J.A. CLARK, A.F. LEVAND, ANL, M. BURKEY, S. CALDWELL, Univ of Chicago, A. CZESZUMSKA, UC Berkeley, T.Y. HIRSH, ANL, K. KOLOS, LLNL, S.T. MARLEY, G.E. MORGAN, LSU, E.B. NORMAN, LBL, A. NYSTROM, Univ of Notre Dame, R. ORFORD, McGill Univ, S. PADGETT, LLNL, A. PREZ GALVN, ANL, K.S. SHARMA, Univ of Manitoba, S.Y. STRAUSS, Univ of Notre Dame, B.S. WANG, LLNL — The decay of radioactive ions confined in an RF ion trap allows indirect measurements of beta-delayed neutron (BDN) emission, by measuring the momentum of the recoiling ion which can be much larger from neutron emission than from only lepton recoil. This method removes most of the systematic errors associated with neutron detection but introduces dependencies on specifics of the decay and interactions of the ion with the RF fields. In addition to BDN emission precursors, measurements were made of the ^{134}Sb beta decay with this technique at Argonne National Laboratory using beams from the CARIBU facility. The ^{134}Sb decay is a good calibrant for understanding the transit of the recoiling ions to the detectors because it has a simple decay scheme, with most of the decay intensity proceeding through a first-forbidden transition to the ground state of ^{134}Te. These results will be discussed.

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